

10/505235

DT09 Rec'd PCT/PTO 19 AUG 2004  
RR-569 PCT/US

# A SYSTEM FOR SALE OF CONSUMER GOODS

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A system for sale of consumer goods

The present invention relates to a system for the sale of consumer goods, wherein the system is designed to provide a customer with a non-validated token that represents an article of merchandise, wherein the said article is to be paid for by the customer at a checkout unit when the token is checked by said unit, the said checkout unit having a device for communicating with an article dispensing device and providing the article dispensing device with a first transaction code after the article has been paid for, and a device for providing the customer with a validated token which bears a second transaction code, wherein the said validated token is to be used to obtain the purchased article from the article dispensing device with the aid of a comparator device within the article dispensing device which compares the transaction code on the validated token as entered in the comparator device with the transaction code that has been communicated by said communication device, and delivery of the article when there is a defined code correspondence.

A previously known system of this type is described in US Patent 5902984, wherein a non-validated token bears both data related to article number and a card serial number which is unique to the individual token. Such tokens are normally displayed on a stand from which the customer may choose the token that represents the article he intends to buy.

However, in the previously known system the article number may change from time to time because of a changed type of a particular article, a new brand or a new product variant, or a correction that has been made to the serial number of the article. This means that previously issued, non-validated tokens on a stand may not be recognisable when they are taken to a control unit. Moreover, frequent pre-printing and replacement of tokens are costly operations.

Therefore, one of the objects of the invention is to provide a system which avoids these disadvantages, but which still maintains the desired advantages of the previously known system, in addition to other new features provided by the present invention.

According to the invention, the system is characterised in:  
that the validated token bears a transaction code selected from the group consisting of:  
- a serially generated transaction code,  
- a randomly generated transaction code,

- a pre-determined series of transaction codes, and
  - a unique token number generated serially or randomly by said providing device; and
- that the validated token is

either

- 5           a) the non-validated token provided with the transaction code through processing in the checkout unit,

or

- b) a replacement token issued by the checkout unit from a token dispenser, from a token printer, or from a supply of pre-made, non-alterable, reusable,  
10           revalidatable and machine-readable tokens.

According to the invention, the system is designed to provide the non-validated token by means of a printer which is controlled by a selection panel that displays articles for which a non-validated token can be printed on the activation thereof.

- 15           Alternatively, the non-validated tokens can be provided from a ready supply of such, different tokens, as is known per se. Although it is known from US Patent 5902984 to use cards as tokens, it is possible according to the invention to use, for example, packaging without its contents as a non-validated token, so that the product or article  
20           that belongs to the packaging can be dispensed from the article dispensing device.

- According to further features of the system according to the invention, the non-validated token bears information related to the article type. The article type information is selected from the group consisting of: a numerical code, a bar code, an EAN code, a  
25           UPC code, a magnetically readable code, a manually interpretable article identification code. In addition, the article type information is selectable from the group consisting of: animation of the article, article name, article price, a unique token number.

- The transaction code that is provided on the validated token is selected from the group  
30           consisting of:  
a numerical code, a bar code, an EAN code, a UPC code, a magnetically readable code, an rf label readable code, a series of numbers, a series of letters, a series of a combination of numbers and letters, at least one row of punched holes, a programmable IC chip, a pre-programmed IC chip.

The communication between the checkout unit and the article dispensing device may be of one or more embodiments, depending on the installation facilities. Advantageously, the communication type is selected from the group consisting of:

- ultrasound transmission,
- 5 - electro-optical transmission,
- rf transmission,
- bluetooth transmission
- wired transmission,
- transmission via a retailer's or trader's central computer unit and general merchandise
- 10 transaction control unit.

In one particular embodiment, the checkout unit comprises or is connected to a transaction code encoder device, the checkout unit comprising an article type

15 information scanner device, wherein the said scanner device is for communicating said information to the encoder device, the said checkout unit communicating with the article dispensing device via said token encoder device, wherein the said token encoder device relays said information to a cash register in said checkout unit for processing during a payment receipt operation, and said token encoder means also has a control

20 unit for controlling a printer which issues the validated article token, and a device for transmitting said communication to the article dispensing device.

The transaction code on the validated token is entered in the comparator device through machine reading of the transaction code, said machine being selected from the group

25 consisting of:

- OCR reader;
- optical scanner for scanning a bar code or an EAN code;
- an electromagnetic magnetic strip reader;
- an IC chip reader;
- 30 - a punched hole reader;
- an rf label code reader.

In one alternative to the machine reading, the article dispensing device has a manually operated keypad, keyboard or touch screen for input into the comparator unit of a

35 manually readable transaction code on the validated token.

Said first and second transaction codes may be the same codes or the codes may be related to each other, e.g., complementary codes, symmetrical codes or unsymmetrical codes.

- 5 The aforementioned selection panel may optionally consist of a touch screen.

The invention will now be described with reference to the attached drawing.

10 The system has a unit 1 which provides or issues a customer with a non-validated token 2 from a printer 3 which is controlled by a selection panel 4 that displays articles for which the non-validated token can be printed on activation of one of the panel elements 4', each element representing an article of merchandise. As an alternative, a selection panel in the form of a display panel 5, e.g., of the LCD type, can show the various selectable articles that are stored in a memory 6. A pointer- or cursor-based two-way or  
15 four-way multifunction switch 7 can be used to enable the customer to move a cursor or pointer on the display panel and, on depression thereof or activation of a separate switch 8, to cause the desired article to be chosen and a non-validated token to be printed by the printer. As a further alternative, the selection panel may be in the form of a large-dimension LCD display or touch screen.

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As another alternative or as a supplement, non-validated tokens 2 can be provided from a ready supply 30 of such, different tokens, as known per se from said US Patent 5902984. Although it is known from US Patent 5902984 to use cards as tokens, it is possible according to the invention to use, for example, packaging without its contents  
25 as a non-validated token, so that the actual product or article belonging to the packaging can be dispensed from the article dispensing device. This is of course suitable for very expensive articles such as perfume and dear cosmetics, compact discs (CDs) and other expensive consumer goods, particularly of the type that are easily stolen in a shop environment. The tokens 2 in the supply 30 may, for example, consist of cards, as  
30 known and shown to the left in the supply 30 or may be packaging as shown to the right in the supply and in any form whatsoever.

The non-validated token 2 bears an information section 2' which is related to the article type information 10. Such information 10 may be represented on the token in a form  
35 selectable from the group consisting of: a numerical code, a bar code, and EAN code, a UPC code, a magnetically readable code, a manually interpretable article identification code. The token may also be provided in a section 2" with additional information

selected from the group consisting of: animation of the article, article name, article price, a unique token number. If a unique token number is provided on the token, the number can be generated serially or randomly by said unit 1.

- 5 The non-validated token 2 is then taken by the customer to a checkout unit 9 for checking the non-validated token 2 as regards its article type information or article code 10. This check will advantageously be done by using a standard optical scanner 11 which is permanently installed or hand-operated. However, it will of course be possible to read the article code manually and enter this via a keypad 12 on a cash register 13 or  
10 by using a magnetic strip reader (decoder) and encoder 14. When the checking is done, the value of the article is added to the bill that is issued by the cash register 13.

The checkout unit 9 has different devices for communicating with an article dispensing device 16 in order to provide the article dispensing device with a transaction code after  
15 payment for the article has been made. A communication method of this kind may be via one or more of the following: wireless transmission 17, 17', such as ultrasound transmission, electro-optical transmission, rf transmission, bluetooth transmission (i.e., short-range radio transmission); wired transmission 18; and transmission 19, 19' via a combined central trader computer and general merchandise transaction control unit 20.

20 The customer may be provided with a validated token 21 that is printed by a dispenser or printer 22 in the checkout unit 9, the said token 21 bearing a transaction code 23 that is the same as or related to the code communicated from the checkout unit 9 to the article dispensing device 16.

25 Alternatively, it may be possible to reuse tokens which a) bear a transaction code that is unique to a particular token; b) have been processed in the article dispensing device and have thus been non-validated; and c) have been placed in a supply of such non-validated tokens 21' irrespective of the order in which the transaction codes appear from  
30 one token to the next. Revalidation of reusable tokens 21' can be done, e.g., by scanning the transaction code on a token and relating the code to the transaction code that is communicated to the article dispensing device 16, wherein the transaction code communicated to the article dispensing device in any case also has information added that is related to the type and the number of the articles that are bought and paid for, and  
35 consequently will be handed to the customer when he presents a validated token 21.

Scanning a token of this kind could be done optically if the reusable token 21' bears an optically readable code, e.g., readable by means of said scanner 11. If based on magnetic strip reading, the reader 14 could be used. It is also conceivable that rf label technology may be used for such reusable tokens. However, this requires an rf label  
5 code reader 29 at the checkout unit 9.

No matter what type of scanning is required to read a code on a reusable token 21', the token reader 24 within the article dispensing device 16 must be capable of reading the code on the validated token 21 that is entered in such a reader. If rf label technology is  
10 used, non-readability of such an rf label based token outside the dispensing device is required as the token must be inserted into the reader, processed and kept by the dispensing device for later re-use.

The validated token 21 (e.g., based on a reusable token, an originally issued token or a substitute token) is used to obtain the bought (and paid for) article from the article  
15 dispensing device 16.

When a validated token 21 is introduced into the token reader 24 on the dispensing device 16, or when the transaction code 23 shown on the token 21 is entered via a  
20 keypad 25, the said keypad also having "cancel" key 25' and "enter" key 25", a comparator device 26 in the article dispensing device 16 compares the transaction code on the validated token as entered in the comparator device 26 with the transaction code that is communicated by said communication device. If a code correspondence is found according to the pre-determined criteria, the dispensing device 16 delivers the article 27  
25 to the customer via the delivery part 16" therein.

Of course, if the transaction code on the validated token is on an rf label, it will not be absolutely necessary to introduce the validated token into the token reader 24, as the token reader may in this case be equipped with an rf label reader 24' which is also  
30 capable of detecting the transaction code on the validated token when this is on the outside of the article dispensing device 16. This is a situation which may be suitable if the rf label is on the packaging.

If the transaction code is presented in the form of a bar code or an EAN code, it is  
35 conceivable that this can be read by an optical scanner which has its field of view facing out from the outside of the device 16. This reader is indicated symbolically by the reader 24'.

The transaction code as relayed to the dispensing device 16, and which is present on the validated token 21, is selected from the group consisting of: a serially generated transaction code, a randomly generated transaction code, and said unique token number.

5 Moreover, the transaction code that is provided on the validated token is advantageously selected from the group consisting of; a numerical code, a bar code, an EAN code, a UPC code, a magnetically readable code, an rf label readable code, a series of numbers, a series of letters, a series of a combination of numbers and letters, at least one row of punched holes, a programmable IC chip, a pre-programmed IC chip.

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However, it is conceivable that a validated token is in fact the non-validated token 2 provided with the transaction code through processing in the checkout unit 9. Such processing could, e.g., take place by using the magnetic encoder 14 to code the magnetic strip 2" on the token 2. Alternatively, a person operating the checkout unit 9  
15 could use the unique token number, if one is present, printed on the token 2 as a transaction number and enter it manually via the keypad 12.

It is also possible that a readable transaction code can be provided on the validated token in the checkout unit when this token, for example, consists of packaging, such as  
20 a box, a wrapping or the like. This means that also the non-validated token consists of this packaging, but is validated in the checkout unit. After validation, the customer may thus take the packaging, which then forms or bears the validated token, to the article dispensing device 16, have the transaction code read there, or enter it himself, whereupon the transaction code becomes invalid at the same time as the article or  
25 product is delivered to the customer. In such a case, the transaction code could, for example, be applied to the packaging using a sticky label, or the transaction code could be uncovered by the removal of a cover sheet or cover strip on the packaging. Of course, it is also possible that the transaction code could be transmitted wirelessly to, for example, an rf label that has been applied or fastened to the packaging.

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However, it is most preferable that the validated token 21 should be a substitute token that is issued by the printer or the token dispenser 22.

It will be noted from the attached drawing that the checkout unit 9 comprises or is  
35 connected to a transaction code encoder device 28. As described above, the checkout unit 9 is associated with said scanner 11, the scanner 11 being capable of communicating the article type information to the transaction code encoder device 28.



Thus, in one particular embodiment, it may be preferable to permit said checkout unit 9 to communicate with the article dispensing device 16 via said transaction code encoder device 28, e.g. via wireless transmission 17'. Said encoder device 28 transmits said information to the cash register 13 which communicates with the checkout unit 9 for processing in a payment receipt operation for addition to the bill 15. The encoder device 28 may also have a control unit 28', for controlling the printer 22 that issues the validated article token 21.

The token reader 24 may be of any chosen type to enable reading in a machine readable form of the transaction code that is the provided on the token 21, thus, e.g., a machine selected from the group consisting of:

- an OCR reader;
- an optical scanner for scanning a bar code or an EAN code;
- an electromagnetic magnetic strip reader;
- 15 - an IC chip reader;
- a punched hole reader; and
- an rf label code reader.

If the validated token, whether the token 21 or the original, but later validated token 2, has a manually readable transaction code, e.g., a series of numbers, the manually operated keypad or keyboard 25 can be used to enter the transaction code on the validated token in the comparator device 26.